Claims

[c1] An apparatus for selecting the optimum location of a network service based on a user's geographical location and the configuration of the apparatus by transparently altering DNS messages, the apparatus comprising:

a network node with at least two network interfaces,

capturing data packets through the network interfaces,

analyzing captured packets,

determining the user's geo-location,

modifying DNS packets according to the user's geo-location to direct the user to the optimum server.

[c2] The apparatus as described in claim 1, wherein the optimum location is the geographically the closest one.

[c3] The apparatus as described in claim 1, wherein the optimum location is that of geographically the closest server which has been determined healthy and actively serving users requests.

[c4] The apparatus as described in claim 3, wherein the healthy server is the one generating timely and correct responses to user requests.

[c5] The apparatus as described in claim 1, wherein the optimum location is the preferred location based on specific criteria chosen by the service administrator.

[c6] The apparatus as described in claim 1, wherein the location of a network service is one of the locations of many mirrored servers that are connected via a network.

[c7] The apparatus as described in claim 1, wherein a network service is an Internet network service.

[c8] The apparatus as described in claim 1, wherein a network service is an enterprise network service.

[c9] The apparatus as described in claim 1, wherein the configuration of the apparatus is a set of rules to control the optimum server selection process.

[c10]   The apparatus as described in claim 1, wherein transparently altering DNS
          messages is to capture and to modify the content of the DNS messages by
          operating at OSI model's second layer which is transparent to Internet Protocol
          (IP) users.

[c11]   The apparatus as described in claim 1, wherein the network node is a device
          attached to networks via at least two network interfaces.

[c12]   The apparatus as described in claim 1, wherein the network node captures every
          packet detected on any of it interfaces.

[c13]   The apparatus as described in claim 1, wherein the network node analyzes the
          captured packets to determine network addresses, protocol port numbers,
          protocol message types, and specific protocol fields.

[c14]   The apparatus as described in claim 1, wherein the network node determines
          the source IP address of the captured DNS message and consults its previously
          built database to determine the geographical location of the user that has sent
          the DNS message.

[c15]   The apparatus as described in claim 1, wherein the network node modifies the
          captured DNS messages according to the geo-location of the DNS user to
          inform the user with the IP address of the optimum server.

[c16]   The apparatus as described in claim 1, wherein the network node forwards
          every packet, which is not a DNS message, to the other interface.

[c17]   A method for selecting the optimum location of a network service based on a
          user's geographical location and the configuration of the method by
          transparently altering DNS messages, the method comprising: capturing data
          packets, analyzing captured packets, determining the user's geo-location,
          modifying DNS packets according to the user's geo-location to direct the user
          to the optimum server.

[c18]   The method as described in claim 17, wherein the optimum location is the
          geographically the closest one.

[c19] The method as described in claim 17, wherein the optimum location is that of geographically the closest server which has been determined healthy and actively serving users requests.

[c20] The method as described in claim 19, wherein the healthy server is the one generating timely and correct responses to user requests.

[c21] The method as described in claim 17, wherein the optimum location is the preferred location for some users based on some criteria chosen by the service administrator.

[c22] The method as described in claim 17, wherein the location of a network service is one of the locations of many mirrored servers that are connected via a network.

[c23] The method as described in claim 17, wherein a network service is an Internet network service.

[c24] The method as described in claim 17, wherein a network service is an enterprise network service.

[c25] The method as described in claim 17, wherein the configuration of the method is a set of rules to control the optimum server selection process.

[c26] The method as described in claim 17, wherein transparently altering DNS messages is to capture and to modify the content of the DNS messages by operating at OSI model's second layer which is transparent to Internet Protocol (IP) users.

[c27] The method as described in claim 17, wherein the method analyzes the captured packets to determine network addresses, protocol port numbers, protocol message types, and specific protocol fields.

[c28] The method as described in claim 17, wherein the method determines the source IP address of the captured DNS message and consults its previously built database to determine the geographical location of the user that has sent the DNS message.

[c29]   The method as described in claim 17, wherein the method modifies the captured DNS messages according to the geo-location of the DNS user to inform the user with the IP address of the optimum server.

[c30]   The method as described in claim 17, wherein the method forwards every packet, which is not a DNS message.